

Appl. No. 10/761,702
Examiner: Warren, Matthew E, Art Unit 2815
In response to the Office Action dated June 30, 2006

Date: September 30, 2006
Attorney Docket No. 10113671

REMARKS

Responsive to the Office Action mailed on June 30, 2006 in the above-referenced application, Applicant respectfully requests amendment of the above-identified application in the manner identified above and that the patent be granted in view of the arguments presented. No new matter has been added by this amendment.

Present Status of Application

Claims 1, 3-7, 9 and 27-28 are pending in the application. Claim 9 is objected to for informalities. Claims 1, 3-7, 9, and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liang et al (US 6,368,952, hereinafter "Liang") in view of Chiang et al (US 5,817,572, hereinafter "Chiang").

In this paper, claim 1 is amended to recite a bit line contact structure of a memory device comprising a tungsten layer or a polysilicon layer filling an opening in a composite dielectric layer exposing a drain region. Support for this amendment can be found at least on pages 9-10 and Figs. 6G-6H of the application. Claim 9 is amended to overcome the objection.

Reconsideration of this application is respectfully requested in light of the amendments and the remarks contained below.

Rejections Under 35 U.S.C. 103(a)

Claims 1, 3-7, 9, and 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liang in view of Chiang. To the extent that the grounds of the rejections may be applied to the claims now pending in this application, they are respectfully traversed.

Whether taken alone or in combination, Liang and Chiang fail to teach or suggest a composite dielectric layer having an opening exposing a drain region, and a tungsten layer or a polysilicon layer filling the opening, as recited in claim 1.

MPEP 2142 reads in part:

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To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

In connection with the third criteria, MPEP 2143.03 goes on the state:

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

As amended, claim 1 recites a bit line contact structure of a memory device, comprising a substrate having a transistor of the memory device thereon, the transistor having a raised gate electrode, a drain region, and a source region; a composite dielectric layer, sequentially having a first dielectric layer, barrier layer, and second dielectric layer, directly on the transistor, the first dielectric layer comprising polyimide, the composite dielectric layer having an opening exposing the drain region; and a tungsten layer or a polysilicon layer *filling* the opening, wherein the thickness of the first dielectric layer is thicker than the second dielectric layer.

In the rejections, the Examiner identifies layers 20a/26a/28a shown in Fig. 6 of Liang as the alleged composite dielectric layer of claim 1. As noted by the Examiner, an opening is formed in the layers 20a/26a/28a. The Examiner further identifies tungsten layer 22a of Liang as the alleged tungsten or polysilicon layer of claim 1.

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As shown in Fig. 6 of Liang, layer 22a does not fill the opening in the alleged composite dielectric layer 20a/26a/28a. To the contrary, layer 22a fills only the opening in layer 20a. The opening 20a/26a/28a is filled by a composite layer 22a/30a/32a comprising a patterned conductor barrier layer 30a and a copper containing interconnect layer 32a in addition to the tungsten layer 22a. See col. 9, line 47 to col. 10, line 16 of Liang.

Applicant therefore submits that Liang fails to teach or suggest a composite dielectric layer having an opening exposing a drain region, and a tungsten layer or a polysilicon layer filling the opening, as recited in claim 1. Applicant further submits that Chiang is silent with respect to this feature.

It is therefore Applicant's belief that even when taken in combination, the prior art references relied upon by the Examiner do not teach or suggest all the limitations of claim 1. For at least this reason, a *prima facie* case of obviousness cannot be established in connection with this claim. Furthermore, as it is Applicant's belief that a *prima facie* case of obviousness is not established for claim 1, the Examiner's arguments in regard to the dependent claims are considered moot and are not addressed here. Allowance of claims 1, 3-7, 9 and 27-28 is respectfully requested.

Conclusion

The Applicant believes that the application is now in condition for allowance and respectfully requests so.

Respectfully submitted,



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